## REFERENCES

BHATT, V. S. (1970): Studies on the biology of some fresh-water fishes. Part

biology of some fresh-water fishes. Part IV. Mystus seenghala (Sykes). J. Bombay nat. Hist. Soc. 67 (2): 194-211.

CHACKO, P. I. & KURIYAN, G. K. (1948): A survey of the fisheries of the Tungabhadra River. Proc. Indian Acad. Sci. 28 (B), (5): 166-176.

KHAN, H. M. (1934): Habits and habitats of food fishes of the Punjab. J. Bombay nat. Hist. Soc. 37: 655-668.

RAJ, B. S. (1940): The extraordinary

breeding habits of the cat-fish, Aoria (Macrones) aor (Ham-Buch.) and A. (Macrones) seenghala (Sykes). Proc. 27th Indian Sci. Congr. (Madras) Part III, Abstract, 156.

SAIGAL, B. N. & MOTWANI, M. P.

(1961): Studies on the fishery and biology of the commercial cat-fishes of the Ganga river system I. Early lifehistory, bionomics and breeding of Mystus (Osteobagrus) seenghala (Sykes). Indian J. Fish. 8 (1): 60-74.

## RAIN OF FISH IN SHILLONG, MEGHALAYA

(With a photograph)

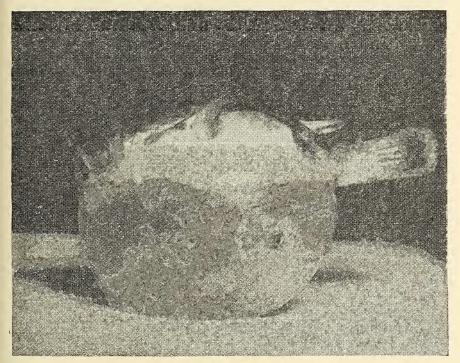
Following a severe hailstorm and heavy rains on 10 April, 1971, one of us (SJSH) saw at about 1 p.m. a whitish object resembling a tennis ball, fall from the sky with a thud into the open courtyard. On closer inspection it was found to be a fish in a highly inflated condition. The fish was preserved and was later identified as the fresh water globe fish, Although dead, it was in a very fresh con-Tetradon cutcutia (Ham.). dition and did not have any marks of injury. It measured 106 mm in length, 75 mm in width and had a displacement volume of 160 cc.

Tetradon cutcutia does not occur in the Khasi-Jaintia Hills of Meghalaya. This rules out the possibility of the fish having been dropped by a bird in flight. It could only have fallen from the sky with the rain and such instances of rain of fishes, although rare, are on record. Gudger (1921, 1929) has recorded 71 instances of rains of fishes from 15 countries all over the world. Hora (1933) has compiled a list of rains of fishes that occurred in India including East Bengal up to the year 1933 and has identified as far as possible the various species. The list is given below, with the current names of the species in parenthesis.

Barbus (Puntius) sophore=[Puntius sophore (Ham.)] Ophicephalus gachua=[Channa orientalis (Bl. & Sch.)] Ophicephalus striatus = [Channa striatus (Bl.)] Ophicephalus marulius=[Channa marulius (Ham.)] Esomus danricus=[Esomus danrica (Ham.)] Chela bacaila=[Oxygaster bacaile (Ham.)] Cerrhina mrigala=[Cirrhinus mrigala (Ham.)] Amblypharyngodon mola (Ham.) Mastacembelus pancalus (Ham.) Cyprinus spp.

According to Hora (loc. cit.) the part of the country below Nepal, from Muzaffarpur in the east and Meerut on the west with Jhansi, Allahabad and Banares forming the southern boundary is the most suitable area for rains of fishes although such instances are available from the western coast (Kathiawar, Bombay and Poona), West Bengal (Dum Dum, Burdwan, Kharagpur and Sundarbans) and East Bengal (Dacca and Sylhet). The easternmost part where it has rained fishes is Sylhet in East Bengal, very near to the Meghalaya border.

Various reasons are attributed for the phenomenon. The most tenable explanation is that it is brought about by the action of high



Tetradon cutcutia

winds, whirlwinds and water-spouts. The presence, sometimes, of fishes that normally live in mud is indicative of the force with which water is sucked up to form the water-spout.

The available records show that all rains of fishes have occurred in plains or places with low elevation. Thus the present rain of the globe fish at Shillong with an altitude of about 5000 ft. (1524 metres) is of considerable interest. It is also significant that *Tetradon cutcutia* does not occur in the hills of Khasi-Jaintia, but is known from the neighbouring plains only. We are inclined to believe that the fish was lifted up from the plains of East Bengal and deposited at Shillong through the

agency of the prevailing winds. The fact that the Meteorological wing of the Military Airport at Shillong recorded a strong wind with a velocity of 25 to 30 Knots on the forenoon of 10th April from a southwesterly direction lends support to this. Standing at the border town of Mawblang (Cherrapuniee) one can well understand how this could have happened. The plains of East Bengal are visible down below to the south, stretching as far as the eye could see. The steep incline of the hills here would lift up the winds blowing from East Bengal almost vertically to great heights. One of us (RSP) who on that day happened to be near Dudhnai (c. 150 km west of Shillong) in the plains district of Garo Hills on a collection tour, experienced a very strong gale and was compelled to take shelter under a bridge. The wind came from the south-west.

Had the fish been floating in the puffed state in which it was picked up, it would have been very easily lifted up by a strong wind or whirlwind. If, on the other hand, it were swimming normally, the formation of a water spout alone would have explained its transport. The aerial mode of transport would naturally have agitated the fish resulting in its inflated condition.

Most of the rain of fishes have occurred during the monsoon months July to September, although there have been exceptionally heavy fall of fishes at Dacca in February, 1830 and Fatehpur in May, 1834. The general belief that the fishes come down usually in the middle of the day with a final heavy shower appears to be true.

The present one is the first record of rain of fishes for the Northeastern part of India (Assam and Meghalaya) and Tetradon cutcutia is being recorded for the first time in a rain of fishes.

## ACKNOWLEDGEMENTS

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EASTERN REGIONAL STATION, ZOOLOGICAL SURVEY OF INDIA, SHILLONG-3, August 23, 1971.

R. S. PILLAI S. J. S. HATTAR

## REFERENCES

HORA, S. L. (1933): Rains of fishes in fishes. Natural History, 21: 607-610. ——— (1929): More rains of fishes. India. J. Proc. Asiatic Soc. Bengal (N.S.) 29: 95-110. Ann. Mag. nat. Hist. (10) 3: 1-24. GUDGER, E. W. (1921): Rains of